

## **REMARKS**

Very thanks for Examination's suggestion and thanks for finding some citations about the present invention, thereby, the applicant may know more information about the invention. This case has been carefully reviewed and analyzed in view of the office action. All details of the reference prior arts are fully considered and compared with the present invention.

To make the present invention novel with respect to the citations, the applicant decide to cancel Claims 1 to 14, without prejudice or disclaimer of the subject matter thereof, and add new claim 15. The added new claim 15 is based on the original claims 1-7 and the features in Fig. 3 of the present invention (that is, the combination of the claims 8 to 14). Thereby, it is assured that the new claims are based on the original claim and specification and thus no new matter is added. The relation of the new claims with respect to the original claims are shown in the following. Those parts underlined are added part, which are not illustrated in the original claims.

Claim 1-14 (Cancelled)

Claim 15. (New) ~~4~~ An engine with an auxiliary airflow booster  
~~auxiliary airflow booster of an engine, comprising:~~

a cylinder 10 having a combustion chamber; a piston 17  
being installed in the combustion chamber;

an air inlet head 11 having an air inlet gate 110 and being  
formed at an upper inlet side of the piston; the air inlet head 11  
being assembled with an air inlet tube 111 for inputting fresh air;  
the air inlet gate 110 being assembled with an air inlet 13, a  
spring 14, and a camshaft 15a;

an exhausting head 12 having an exhausting gate 120 and

being formed at an upper outlet side of the piston 17; an exhausting tube 19 being assembled to the exhausting head for exhausting waste gas; the exhausting gate 120 being assembled with an air output gate 16, a spring 14 and a camshaft, wherein input air is mixed with fuel in the combustion chamber and then burns, the air inlet gate 13 is opened, and the air outlet gate 16 is closed; when waste gas is exhausted, the air inlet gate 13 is closed and the exhausting gate 16 is opened;

an exhausting tube 19 connected to the exhausting head 12;  
and

an auxiliary airflow booster installed to the exhausting tube 19 at an exhausting gate 120 of the exhausting head 12; the auxiliary airflow booster being a hollow body 20; an inner wall of the auxiliary airflow booster being formed with a narrowing portion which comprises two opposite tapered surfaces so as to have a front via hole 22 and a rear via hole 23; the front via hole 22 having ~~has~~ a front tapered portion 220 and the rear via hole 23 having ~~has~~ a rear tapered portion 230; an inner diameter of the front via hole 22 being smaller than the inner diameter of the rear via hole 23; namely, the narrow portions of the front tapered portion 220 and rear tapered portion 230 being ~~are~~ connected; since the inner diameter of the rear via hole 23 being larger than the inner diameter of the front via hole 22, the rear via hole 23 expanding the diameter of the body; by above structure, the exhausting speed of waste gas is increased so that more fresh air is sucked into the cylinder; a small opening of the front tapered portion being directly connected to a small opening of the rear tapered portion; a cross section of the front tapered portion is formed as a trapezoidal shape having four straight sides; and a cross section of the rear tapered portion is formed as a trapezoidal shape having four straight sides;

~~Claim 9. (New) The engine with an auxiliary airflow booster auxiliary airflow booster of an engine as claimed in claim 8 1,~~  
wherein the length of the front tapered portion 220 of the front  
via hole 22 is shorter than that of the ~~second~~ rear tapered portion  
of the rear via hole 23.

~~Claim 10. (New) The engine with an auxiliary airflow booster auxiliary airflow booster of an engine as claimed in claim 8 1,~~ wherein the material of the body is selected from one  
of metals and ceramics.

~~Claim 11. (New) The engine with an auxiliary airflow booster auxiliary airflow booster of an engine as claimed in claim 8 1,~~ wherein an auxiliary cover 26 covers the periphery of  
the body 20.

~~Claim 12. (New) The engine with an auxiliary airflow booster auxiliary airflow booster of an engine as claimed in claim 8 1,~~ wherein a locking sheet 24 is formed at a front end of  
the body for locking the exhausting head 12 at the exhausting  
gate 120 of the cylinder 10, and a rear end thereof is installed  
with a connecting section 25 for engaging the exhausting tube  
19.

~~Claim 13. (New) The engine with an auxiliary airflow booster auxiliary airflow booster of an engine as claimed in claim 8 1,~~ wherein an inner wall of the exhausting gate 120 of  
the exhausting head 12 of a cylinder is formed with a narrowing  
portion 21 which comprises two opposite tapered surfaces so as  
to have a front via hole 22 and a rear via hole 23; the front via  
hole 22 has a front tapered portion 220 and the rear via hole 23  
has a rear tapered portion 230.

~~Claim 14. (New) The engine with an auxiliary airflow booster auxiliary airflow booster of an engine as claimed in~~

~~claim 8-1~~, wherein at least one body ~~bodies~~ is installed in the exhausting tube.

## DISCUSSION ABOUT NOVELTY OF THE NEW CLAIMS

(A) In this amendment, we add the feature of “Two sides of the cross sections of the front tapered portion 220 and rear tapered portion 230 passing through central axes of the front tapered portion 220 and rear tapered portion 230 are formed as straight lines. A small opening of the front tapered portion 220 is directly connected to a small opening of the rear tapered portion 230. A cross section of the front tapered portion 220 is formed as a trapezoidal shape having four straight sides; and a cross section of the rear tapered portion 230 is formed as a trapezoidal shape having four straight sides.” to the previous present claims 1 to 7.

The features are illustrated the attached drawings. However as comparing with citations USP3,657,878, it is found that the sides of the tapered portions are cambered. Thereby from this viewpoint, the present invention is novel and inventive.

In fact, the design of the front tapered portion and the rear tapered portion of the present invention will cause the air to generate a great impact. Since in the connection of the front and rear tapered portions, the air has great compression in the opening of the connection, and then air flows through the connection area which is enlarged and thus air will be released with a great speed. However, the cambered wall of the tapered section in the prior art '878 cause air to flow through a smooth section (the cambered section) so that air is not compressed to a maximum extent. Thereby the impact of the air in the citation is not so large so that in the present invention.

(B) Other than the features discussed in item (A), from the office action, it is illustrated that the office action cites three citations USP3,657,878, USP06-185340 and USP6,234,124, that the features of the present invention are formed by many various prior art technologies, which

is also a proof of the novelty of the present invention.

**(B) RESULT**

Since in above discussion, it is apparent that no prior art has the features of the present invention, especially in new claim 15. Furthermore, as we know that no other prior art has features of the present invention. Thus, the present invention is novel and inventive.

**If there is any error in the specification, or claims, applicant requests and authorizes Examiner to amend the claims, specification and drawings of the present invention so that they can match the requirement of U. S. Patent. Attentions of Examiner to this matter are greatly appreciated.**

It is now believed that the subject Patent Application has been placed in condition for allowance, and such action is respectively requested.

Respectfully submitted.

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Dated: 06 / 02 /2005

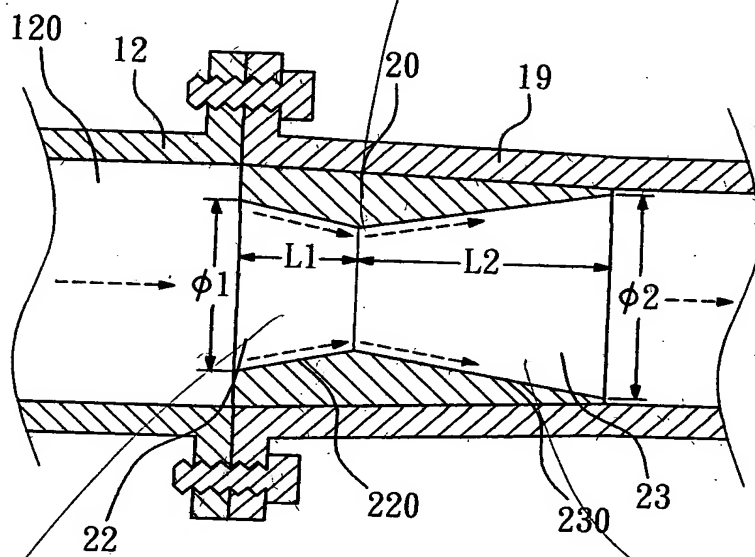
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A Drawing used in discussion of ~~about~~ of response to the official action



A small opening of the front tapered portion is directly to a small opening of the rear tapered portion



A cross section of the front tapered portion is formed as a trapezoidal shape having four straight sides.

FIG. 4

A cross section of the rear tapered portion is formed as a trapezoidal shape having four straight sides.